

# RECENT RANGE EXPANSION OF THE AMERICAN OYSTERCATCHER INTO NEW YORK

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THE American Oystercatcher (*Haematopus palliatus*) formerly bred on the Atlantic coast as far north as Labrador (Audubon, 1835). Although this report has been questioned (Bent, 1929), other records (Baird, Brewer, and Ridgway, 1844) document its occurrence as far north as New England. During the mid-nineteenth century this species disappeared from the northern part of its range, and by 1910 Virginia was listed as the northernmost breeding limit (American Ornithologists' Union, 1910). For several decades this limit remained static but in 1939 the first recent Maryland breeding record was obtained (Stewart and Robbins, 1958). In the early 1940's the species increased on the beaches of southern New Jersey and in 1947 the first nest was found (Kramer, 1948). The species now breeds regularly in the three southernmost coastal counties of New Jersey. During the early 1950's a number of breeding season occurrences of the oystercatcher were recorded on Long Island, New York and in 1957 the first nest was found (Post, 1961). It is hoped that this paper will contribute to an understanding of this range expansion.

## NESTING LOCALITIES

Oystercatchers have now bred in three areas on Long Island and were observed for two summers in a fourth. Since these stations are geographically and ecologically distinct, they will be described separately and in some detail to facilitate comparison with former and possible future breeding locations.

*Area 1 (Gardiner's and Cartwright Islands).*—Gardiner's Island is located in Gardiner's Bay which separates the north and south forks of eastern Long Island and is about 2.25 miles from the nearest point on the mainland. The southern tip of the island, the oystercatcher breeding site, consists of a sandy spit nearly separated from the island itself by Great Pond, a tidal bay about 0.5 by 0.25 mile in area. The spit is fairly well covered with grasses, weeds, and bushy growth (Fig. 1). A thriving gull and tern colony is located here.

Cartwright Island was, until recent years, a low, sandy island about a mile south of Gardiner's Island. It formerly supported large tern and gull colonies. Within the last few years, the island was broken by wave action into four segments which may be designated as the Cartwright Islands. In 1962, the southern island, about 800 by 100 feet and perhaps 6 feet high, supported about 15 pairs of Great Black-backed Gulls (*Larus marinus*). The second and fourth segments from the south, narrow and low, were empty of breeding birds. The third island, about 1,000 by 100 feet in size and only 3 to 4 feet above water level, was occupied by about a dozen pairs of Herring Gulls (*Larus argentatus*), 100 pairs of Common Terns (*Sterna hirundo*), a few Roseate Terns (*S. dougallii*), a pair or two of Black Skimmers (*Rynchops nigra*), and a pair of oystercatchers.



FIG. 1. The southern tip of Gardiner's Island showing the characteristic oystercatcher nesting habitat of Area 1, 11 July 1964. Photo by Peter W. Post.

The Cartwright Islands consist largely of water-worn pebbles, coarse sand, and broken seashells. The first and third islands support a minor amount of very sparse vegetation. The small amount of driftwood present is important as shelter for juvenile birds. The western side of the island drops off rather steeply into deep water whereas the shoreline on the east descends more gradually. Mean tidal range is 2.3 feet.

Both Gardiner's and Cartwright Islands are accessible only by boat, so the nesting areas are relatively undisturbed. Both are normally visited once or twice each season by bird banders and other ornithologists while fishermen and boaters infrequently land on the beaches.

*Area 2 (Moriches Bay).*—Moriches Bay, about 10 miles in length from east to west and 1 to 2 miles wide, is located near the center of the south shore of Long Island.

In 1958 dredging formed a large island almost inside the inlet. Although officially unnamed, this may be designated here as West Inlet Island. This island, the oystercatcher breeding site, is roughly rectangular, about 800 feet from north to south, 2,000 feet from east to west, and as much as 20 feet high in places. To the north and west of the island the bay floor slopes very gently, becoming exposed as extensive mud flats for nearly half a mile at low tide, but to the south and east are relatively deep, swift-flowing tidal channels leading to the inlet. Mean tidal range is 0.5 foot.

When first formed the island was mostly fine to medium sand mixed with some shells and a few pebbles. Vegetation was completely absent during the first year but by 1962, the north and east shores had a rim of *Phragmites* averaging 20 feet wide just above high water mark while inside of this and along the south shore were extensive areas of beachgrass (*Ammophila breviguata*). The interior of the island was nearly one-half covered by beachgrass, seaside goldenrod (*Solidago sempervirens*), and a variety of other

forbs. Considerable driftwood and other debris had accumulated above high tide level.

This island played host in 1962 to about 6,000 pairs of terns and about 200 pairs of Black Skimmers in addition to the oystercatchers. Human disturbance is much more common here than at Area 1. The adjacent waters are popular fishing grounds, and over 100 boats can sometimes be counted within 1 mile. During the summer fishermen, boaters, picnickers, and rarely campers land on the island daily. Bird banders work the nesting areas intensively and birders visit the island and adjacent flats weekly. These activities, however, are not known to have caused any important disruption of nesting.

During the winter of 1962-63 the island was joined to the barrier beach by dredging. This eliminated the tern and skimmer colony, allowed predators such as rats and foxes free access to the area, and increased human disturbance. The oystercatchers, however, returned to nest.

*Area 3 (Shinnecock Bay).*—Shinnecock Bay is located about 13 miles east of Moriches Bay and is rather similar habitat, having an inlet to the ocean and containing several islands as well as flats and sand bars inside the inlet. The oystercatcher nesting area here, however, was on a sandy portion of the bay side of the barrier beach about 2 miles west of the inlet. Human disturbance is minor in the immediate nesting vicinity but predators (rats, cats, and foxes) are present in the area and a large gull colony is on a nearby island.

*Area 4 (Jones Inlet).*—This inlet has existed considerably longer than Moriches and Shinnecock Inlets, is wider and deeper, and has similar sandy stretches of barrier beach on each side. It is quite subject to human disturbance and has only one small sandy island possibly suitable for an oystercatcher breeding site.

#### NESTING OCCURRENCES

*Area 1.*—Gardiner's and Cartwright Islands and other nearby localities have attracted a large percentage of the oystercatchers that have been observed on Long Island. Between the years 1915 and 1936 oystercatchers were recorded in this area seven times. Single birds were seen on the southern tip of Gardiner's Island on 24 May 1952, 22 July 1955, and 1 and 19 July 1956.

On 13 July 1957 (not 13 June as listed in Post, *op. cit.*) an oystercatcher's nest containing three addled eggs was discovered on the southern tip of Gardiner's Island. This is the first known nesting of the American Oystercatcher in New York in this century.

On 17 June 1960 a pair of oystercatchers was observed at Springs and on 15 July 1961 a pair was seen at Napeague. These two locations border on Gardiner's Bay near the Cartwright Islands. On 22 July 1961 five adult birds were on Cartwright Island but gave no evidence of breeding. On the southern tip of Gardiner's Island one adult was seen which flew about the observers calling excitedly and carrying food. No young were found although at least one was probably somewhere in hiding. On 17 August two adults were still present on Cartwright.

On 23 June 1962, two adult oystercatchers and a nest containing five eggs were found on the third Cartwright Island (Fig. 2). On 14 July a flock of six additional adults which gave no indication of breeding was on the southern tip



FIG. 2. Oystercatcher nest containing five eggs, Cartwright Island, 14 July 1962. Photo by Klaus D. Kallman.

of Gardiner's. On 22 July the Cartwright Island pair was still incubating five eggs. On 28 July the nest was found washed out, apparently by a heavy thunderstorm which occurred a few days previously, and both adults were gone. In view of the lengthy incubation, the nest may have been abandoned before being washed out.

In 1963, a grown young was seen on the south tip of Gardiner's Island on 13 July. Two to four adults were seen on Cartwright Island on 6 and 13 July but no nest or young were found.

*Area 2.*—Moriches Inlet has also been favored by oystercatchers for some time. This species was recorded here in the breeding season at least three times between 1937 and 1939 and again in 1950. On 6 June 1960, two adults were observed on West Inlet Island. On 10 June, the nest containing three eggs was located. The first egg hatched on 2 July and the second by 4 July. By 6 July all three eggs had successfully hatched but the young apparently survived only a few days. Only one adult could be found on 7 July and no oystercatchers were present from 15 July on.

In 1961, a nest containing three eggs was found on 3 June. Young were first observed on 22 June, two birds estimated to be 10 to 14 days old. The next day only one could be found as well as "one dead young about a week old." Therefore, all three eggs apparently hatched, one bird dying when

quite young and the second between 22 and 23 June. By 11 July the surviving young was flying freely. Both adults and the remaining young were still present on 2 September but were not seen on 9 September or later.

In 1962, the adults were first seen on 26 May. The nest was not found so the number of eggs laid is unknown. However, on 9 June three young were seen and estimated to be 10 to 14 days old. On 15 June all were still present but by 23 June only two could be located. On 1 July one young was flying and the other was almost able to fly. Both adults and the two young were still present on 30 September, after which no further visits were made to the island.

In 1963, a nest with three eggs was found on 25 May. On 1 June, one young had hatched and another egg was pipped. This egg and the third, however, never hatched. The single young survived to flight stage. The group left the area in mid-August.

*Area 3.*—At Shinnecock Bay in 1963 a nest with three eggs was found in early June. Only one egg hatched and the young disappeared within a few days.

*Area 4.*—At Jones Inlet a pair of adult oystercatchers was observed during the breeding season in 1960 and 1961, but apparently no breeding attempts were made.

#### ECOLOGY

Feeding and nesting habits have been reported by a number of writers but Tompkins (1947, 1954) has presented the most detailed discussion of the ecological requirements of the American Oystercatcher. He stressed the importance of beds of oysters or clams uncovered daily by the tides, for food and open ground with good visibility, access to feeding areas, and distance from other nesting birds for nesting sites.

Along the coasts of Long Island and New Jersey, these criteria are not completely met in any known breeding area. Oysters are normally found only in waters too deep to allow their utilization by oystercatchers, although other bivalves which do occur in the intertidal zone appear to offer acceptable substitutes. Most outer beaches are either developed for human occupancy or bathing or are too heavily disturbed to form suitable breeding sites. The few suitable islands are heavily occupied by gull, tern, and skimmer colonies.

*Food.*—Few observations of the food of the Long Island breeding birds have been obtained, but food is not judged to be a limiting factor in any potential breeding area since bivalves of one species or another are common and well distributed. During 1962, at Moriches, the adults were observed feeding the young in the vicinity of the nest with ribbed mussels (*Modiolus plicatus*) which were brought from the flats and opened as the young were fed. This habit of bringing food to the chicks has also been reported for the European

Oystercatcher (*Haematopus ostralegus*) (Dircksen, 1938) and the Black Oystercatcher (*H. bachmani*) (Webster, 1941). Over a period of time quite a quantity of shells accumulated in this spot. On 10 June they covered an area about 8 to 10 inches but subsequently spread to several square feet. In addition to mussels, razor clams (*Ensis directus*) and hard clams (*Venus mercenaria*) were fed. These are all common to abundant in the immediate area while oysters (*Ostrea virginica*) are very scarce to absent.

*Nesting sites.*—The chief limitation on the oystercatcher population along the coasts of the mid-Atlantic states seems to be the scarcity of suitable nesting sites and the prior occupation of the best areas by gulls and terns. Observations in southern New Jersey in 1962 suggest that the current population may be near the maximum the region can support. This, we believe, is one of the principal factors in the current northward range expansion.

#### REPRODUCTIVE SUCCESS

*Clutch size.*—The number of eggs laid by the New York breeding birds seems somewhat above the average for the species farther south although the sample size is still small. The most complete published data on clutch size are by Burleigh (1958) from the Georgia coast where 56 clutches had an average of 2.6 eggs. Some of these may not have been complete, however. Sprunt and Chamberlain (1949) quote Wayne to the effect that clutch size "invariably" numbers three, but sometimes two eggs are laid. The only previous record of a nest containing five eggs apparently laid by only one female is given by Tompkins (1954). Dircksen (1932), who studied the European Oystercatcher in Germany, found a mean of 3.01 eggs and a standard deviation of 0.68 in 84 clutches. Of the seven known New York clutches, six held at least three eggs and one five, giving a mean of about 3.3.

*Hatching success.*—Hatching success of the New York birds is about 48 per cent. The 1957 Gardiner's Island nest had all three eggs addled. The 1962 Cartwright Island nest of five eggs was washed out but may have been previously abandoned. All three eggs laid in the 1960 and 1961 Moriches nests hatched as did three from the unknown number laid in 1962. However, only one of three hatched in 1963 at both Moriches and Shinnecock.

*Survival of young.*—Of the 11 young known to have hatched at Moriches and Shinnecock, only 4 (36 per cent) survived to the flight stage, one in 1961, two in 1962, and one in 1963, all at Moriches. The writers believe that all mortality at Moriches was caused by Common Tern attacks. Both young and adult oystercatchers were constantly attacked by terns whenever they stood erect within or near the nesting colony. At Moriches the family group was seen ducking repeatedly as terns dived at them. At Cartwright Island the incubating adults had great difficulty returning to their nests after they

had been flushed because of the repeated "dive-bombing" of the associated terns. Kramer (1948) reported a similar situation at the first known New Jersey nesting location. The young at Moriches were most likely killed directly by the terns although some may have starved to death due to the inability of the adults to care for them adequately while under incessant attack. The young were observed to remain in the vicinity of the nest for 2 weeks or more before moving to the nearby mud flats where they were no longer bothered by the terns.

The increasing success of the oystercatchers at Moriches in raising young seems to be due to two factors: (1) the earlier nesting in successive years. In 1960 the young hatched during the first week in July, in 1961 during the second week in June, and in 1962 and 1963 about the last week in May. This enabled the adults to get the young away from the terns before the latter reached their peak of aggressiveness. (2) The increasing vegetative cover of the island which gives the adults and young more shelter from aerial attack.

#### OUTLOOK

The outlook for future population increase on Long Island is unfavorable. The Cartwright Islands are in the process of washing away and even now, due to their slight elevation above tide level, are marginal habitat. The only suitable breeding areas on Gardiner's Island are heavily occupied by gulls and terns. Both former islands at Moriches are now open to predation and human disturbance. Few other suitable breeding areas exist on Long Island. Therefore, little increase and probably an eventual elimination of the present breeding population is anticipated unless the species can adapt to closer association with humans than in the past. The prognosis for expansion into New England seems similar.

#### SUMMARY

A northward expansion of the breeding range of the American Oystercatcher began from Virginia in about the late 1930's and reached New York two decades later. The species has now nested in three distinct areas of Long Island. These breeding areas which differ from each other and from breeding areas in the species' southern range and the nesting occurrences are described. The ecological suitability of the Middle Atlantic coastline for this species is discussed and reproductive success is reported.

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